

associated with *Mariscus fauriei* on the island of Lanai (Service 1996a).

Nothing is known of the threats to *Mariscus fauriei* on the island of Lanai (Service 1996a).

#### *Melicope munroi* (alani)

*Melicope munroi*, a long-lived perennial of the rue (citrus) family (Rutaceae), is a sprawling shrub up to 3 m (10 ft) tall. The new growth of this species has minute hairs. This species differs from other Hawaiian members of the genus in the shape of the leaf and the length of the inflorescence (flower cluster) stalk (Stone *et al.*, 1999).

Little is known about the life history of *Melicope munroi*. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 2001).

Historically, this species was known from the Lanaihale summit ridge of Lanai and above Kamalo on Molokai. Currently, *Melicope munroi* is known only from the Lanaihale summit ridge on Lanai. There are two occurrences totaling an estimated 35 individual plants on privately owned land on the Lanaihale summit, head of Hauola gulch, Waialala gulch, and the ridge of Waialala gulch (GDSI 2000; HINHP Database 2000; Service 2001; 64 FR 48307).

*Melicope munroi* is typically found on slopes in lowland wet shrublands, at elevations of 701 and 1,032 m (2,299 and 3,385 ft). Associated native plant species include *Broussaisia arguta*, *Cheirodendron trigynum*, *Coprosma* spp., *Dicranopteris linearis*, *Diplopterygium pinnatum*, *Machaerina angustifolia*, other *Melicope* spp., or *Metrosideros polymorpha* (HINHP Database 2000; Service 2001).

The major threats to *Melicope munroi* on Lanai are trampling, browsing, and habitat degradation by axis deer and competition with the nonnative plant species *Leptospermum scoparium* and *Psidium cattleianum*. In addition, the limited number of individuals in the two remaining occurrences makes it extremely vulnerable to extinction from random environmental events (HINHP Database 2000; Service 2001; 64 FR 48307).

#### *Neraudia sericea* (NCN)

*Neraudia sericea*, a short-lived perennial member of the nettle family (Urticaceae), is a 3 to 5 m (10 to 16 ft) tall shrub with densely hairy branches. The lower leaf surface is densely covered with irregularly curved, silky gray to white hairs along the veins. *Neraudia sericea* differs from the other

four species of this endemic Hawaiian genus by the density, length, color, and posture of the hairs on the lower leaf surface and by its mostly entire leaf margins (Wagner *et al.*, 1999).

Little is known about the life history of *Neraudia sericea*. Flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1999; 59 FR 56333).

*Neraudia sericea* was historically found on Molokai, Lanai, Maui, and Kahoolawe. Currently, this species is extant on Molokai and Maui. It was last seen on Lanai in 1913 (GDSI 2000; HINHP Database 2000; Service 1999; 59 FR 56333).

*Neraudia sericea* generally occurs in gulch slopes or gulch bottoms in dry-mesic or mesic forest at elevations between 693 and 869 m (2,273 and 2,850 ft). Associated native species include *Diospyros sandwicensis*, *Dodonaea viscosa*, *Metrosideros polymorpha*, or *Nestegis sandwicensis* (HINHP Database 2000; 59 FR 56333; J. Lau, pers. comm., 2001).

The primary threats to *Neraudia sericea* on Lanai included habitat degradation by pigs (*Sus scrofa*), and goats (currently axis deer and mouflon sheep), and competition with nonnative plant species (Service 1999; 59 FR 56333).

#### *Portulaca sclerocarpa* (poe)

*Portulaca sclerocarpa* of the purslane family (Portulacaceae) is a short-lived perennial herb with a tuberous taproot and has stems up to about 20 cm (8 in) long. The succulent, grayish-green leaves are almost circular in cross-section. The petals are white, pink, or pink with a white base. The hardened capsules open very late or not at all, and contain dark reddish-brown seeds. This species differs from other native and naturalized species of the genus in Hawaii by its woody taproot, its narrow leaves, and the colors of its petals and seeds. Its closest relative, *P. villosa*, differs mainly in its thinner-walled, opening capsule (Wagner *et al.*, 1999).

This species has been observed in flower during March, June, and December. The presence of juveniles indicated that pollination and germination were occurring. Pollination vectors, seed dispersal agents, longevity of plants and seeds, specific environmental requirements, and other limiting factors are unknown (Service 1996a).

*Portulaca sclerocarpa* was historically and is currently found on the island of Hawaii, and on an islet (Poopoo Islet) off the south coast of the island of Lanai.

The Lanai occurrence on privately owned land contains about 10 plants. Poopoo Islet is a small rocky outcrop, 1 ha (2.4 ac) in area and approximately 200 m (600 ft) from the south shoreline, and is considered part of the island of Lanai (GDSI 2000; HINHP Database 2000; Service 1996a).

This species grows on exposed ledges in thin soil in coastal communities at elevations between 0 and 82 m (0 and 269 ft) (HINHP Database 2000; Wagner *et al.*, 1999).

The major threats to *Portulaca sclerocarpa* on Lanai are herbivory by the larvae of a nonnative sphinx moth (*Hyles lineata*); competition from nonnative plants; and fire (Service 1996a; 59 FR 10305; Frank Howarth, Bishop Museum, *in litt.* 2000).

#### *Sesbania tomentosa* (ohai)

*Sesbania tomentosa*, a member of the pea family (Fabaceae), is typically a sprawling short-lived perennial shrub, but may also be a small tree. Each compound leaf consists of 18 to 38 oblong to elliptic leaflets, which are usually sparsely to densely covered with silky hairs. The flowers are a salmon color tinged with yellow, orange-red, scarlet or, rarely, pure yellow. *Sesbania tomentosa* is the only endemic Hawaiian species in the genus, differing from the naturalized *S. sesban* by the color of the flowers, the longer petals and calyx, and the number of seeds per pod (Geesink *et al.*, 1999).

The pollination biology of *Sesbania tomentosa* has been studied by David Hopper, University of Hawaii. His findings suggest that although many insects visit *Sesbania* flowers, the majority of successful pollination is accomplished by native bees of the genus *Hylaeus*, and that occurrences at Kaena Point on Oahu are probably pollinator-limited. Flowering at Kaena Point is highest during the winter-spring rains, and gradually declines throughout the rest of the year. Other aspects of this plant's life history are unknown (Service 1999).

Currently, *Sesbania tomentosa* occurs on six of the eight main Hawaiian Islands (Kauai, Oahu, Molokai, Kahoolawe, Maui, and Hawaii) and on two islands in the Northwestern Hawaiian Islands (Nihoa and Necker). Although once found on Niihau and Lanai, it is no longer extant on those islands. It was last seen on Lanai in 1957 (GDSI 2000; HINHP Database 2000; 59 FR 56333).

*Sesbania tomentosa* is found on sandy beaches, dunes, or pond margins at elevations between 44 and 221 m (144 and 725 ft). It commonly occurs in coastal dry shrublands or mixed coastal